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10/806,563	03/23/2004	Lenny Lee Albin	WRG-0068	2578
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			EXAMINER LEUNG, JENNIFER A	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/806,563	<b>Applicant(s)</b> ALBIN, LENNY LEE	
	<b>Examiner</b> Jennifer A. Leung	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) 47-56 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-46 and 57 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-57 are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.



#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>8-4-05; 7/25/05; 4/18/05; 7/9/04</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I, claims 1-46 and 57, in the reply filed on August 2, 2007 is acknowledged. Group II, claims 47-56, is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

### ***Drawings***

2. The informal drawings are of sufficient quality to permit examination. However, replacement drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to this Office action. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 57 is rejected under 35 U.S.C. 102(b) as being anticipated by Yamashita (JP 01-214519).

Yamashita (see figure; abstract) discloses an apparatus comprising dust collecting means (i.e., a hopper 1 with filter 7) in fluid communication with at least one storage bin (see figure, not

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labeled) holding a particulate substance; vacuum producing means (i.e., air pump **3**) in fluid communication (via suction pipe **4b**) with the dust collecting means **1/7** so that the particulate substance is drawn into the dust collecting means **1/7** from the storage bin by a vacuum (via suction pipe **4a**); and means (i.e., pressure tank **2**) for receiving the particulate substance from the dust collecting means **1/7** and injecting the particulate substance into a fluid stream (i.e., using pressurized gas from air pump **3**, to transport pipe **6**).

Instant claim 57 structurally reads on the apparatus of Yamashita.

4. Claims 1-4, 8, 9, 11, 15-21, 24, 26, 27, 31, 46 and 57 are rejected under 35 U.S.C. 102(b) as being anticipated by Markham et al. (US 3,591,525).

Regarding claims 1, 2, 4, 46 and 57, Markham et al. (Figure; column 2, line 58 to column 3, line 31) discloses an apparatus comprising:

a dust collector/dust collecting means (i.e., hopper **3**) in fluid communication with at least one storage bin (i.e., reservoir **1**) holding a particulate material, the dust collector/dust collecting means comprising a filter **7**;

a vacuum producer/vacuum producing means (i.e., air ejector **4**) in fluid communication with the dust collector **3** so that the vacuum producer/vacuum producing means generates a vacuum within the dust collector **3** that draws the particulate material (i.e., via flexible pipe **2**, a.k.a. hose) into the dust collector **3**; and

a transfer pot/means for receiving (i.e., hopper **8**) in fluid communication with the dust collector/dust collecting means **3** for receiving the particulate material from the dust collector/dust collecting means **3**, the transfer pot/means for receiving **8** being in fluid communication with a fluidized bed column **17** that is fluidized by a fluid stream supplied to the

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base of the column and a source of pressurized air (i.e., from a compressed air main **6**), so that the particulate material is injected into the fluidized bed column **17** (i.e., via pipe **16**) in response to a pressure differential between the transfer pot **8** and the column **17**.

Although Markham et al. is silent as to a "catalytic cracking" reaction being conducted within the fluidized bed column **17**, the apparatus of Markham et al. nonetheless meets the claims, since expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim, *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Regarding claim 3, Markham et al. further discloses a first valve (see illustration of valve in the figure, not labeled) coupled to the hose **2**.

Regarding claim 8, the dust collector **3** comprises a substantially cylindrical upper portion and an adjoining substantially conical lower portion, and the transfer pot **8** comprises a substantially cylindrical upper portion adjoining the lower portion of the dust collector **3**, and substantially conical lower portion adjoining the upper portion of the transfer pot **8** (see figure).

Regarding claim 9, the lower portion of the dust collector **3** has an opening formed therein (i.e., adjacent to valve **10**), for permitting particulate material to flow from the dust collector **3** to the transfer pot **8**.

Regarding claim 11, the lower portion of the transfer pot **8** has an opening formed therein (i.e., adjacent to the valve, not labeled, located above valve **11**), for permitting particulate

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material to flow from the transfer pot 8 to the fluidized bed column 17.

Regarding claims 15-17, the dust collector 3 and the transfer pot 8 each comprise a respective sidewall; the at least one storage bin 1 and the dust collector 3 are non-adjoining; and the dust collector 3 adjoins the transfer pot 8 (see figure).

Regarding claims 18-20, Markham et al. (Figure; column 2, line 58 to column 3, line 31) discloses an apparatus comprising: a storage bin 1 for storing a particulate material at a first location; a loading unit comprising a dust collector 3 and a transfer pot 8 positioned in a second location remote from the first location; the loading unit being in fluid communication with the storage bin 1 and a fluidized bed column 17 on a selective basis, wherein the loading unit is capable of being evacuated (i.e., via an ejector 4, a.k.a., vacuum producer) so that a resulting vacuum within the loading unit draws the particulate material from the storage bin 1 (i.e., via flexible pipe 2), and the loading unit is capable of being pressurized (i.e., with compressed air from line 6) so that the particulate material is transferred (i.e., via pipe 16) from the loading unit to the fluidized bed column 17.

Although Markham et al. is silent as to a "fluidized catalytic cracking" reaction being conducted within the fluidized bed column 17, the apparatus of Markham et al. nonetheless meets the claims, since expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

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Regarding claim 21, the dust collector 3 comprises a filter 7 in fluid communication with the vacuum producer 4.

Regarding claim 24, the dust collector 3 comprises a substantially cylindrical upper portion and an adjoining substantially conical lower portion, and the transfer pot 8 comprises a substantially cylindrical upper portion adjoining the lower portion of the dust collector 3, and substantially conical lower portion adjoining the upper portion of the transfer pot 8 (see figure).

Regarding claim 26, the lower portion of the transfer pot 8 has an opening formed therein (i.e., adjacent to the valve, not labeled, located above valve 11), for permitting particulate material to flow from the transfer pot 8 to the fluidized bed column 17.

Regarding claims 27 and 31, the dust collector 3 and the transfer pot 8 each comprise a respective sidewall, and the dust collector 3 adjoins the transfer pot 8.

Instant claims 1-4, 8, 9, 11, 15-21, 24, 26, 27, 31, 46 and 57 structurally read on the apparatus of Markham et al.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Markham et al. (US 3,591,525) in view of Harpham (WO 00/48723).

Regarding claim 5, Markham et al. is silent as to the provision of a volume chamber/moisture trap for drying the air used to pressurize the loading unit. Harpham, however,

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teaches that when compressed air is used as the conveying medium, a dehumidifying apparatus may be connected before or after the compressor, if the material being conveyed is sensitive to moisture (see page 4, lines 12-13). It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a volume chamber/moisture trap for drying the air used to pressurize the loading unit in the apparatus of Markham et al., on the basis of suitability for the intended use and absent a showing of unexpected results thereof, because the Examiner takes Official Notice that a volume chamber/moisture trap would have been considered a well known dehumidifying apparatus in the art, and furthermore, such means would have prevented the moisture in the air from affecting a moisture sensitive material being conveyed by the apparatus, as taught by Harpham.

Regarding claim 28, Markham et al. discloses that the second location is remote from the first location (see figure), but is silent as to the second location being located no more than approximately twenty feet from the first location. In any event, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to configure the second location to be no more than approximately twenty feet away from the first location in the apparatus of Markham et al., on the basis of suitability for the intended use and absent a showing of unexpected results thereof, because the claimed distance would have been considered conventional in the art, as further evidenced by Harpham (see page 4, line 19 to page 5, line 3).

6. Claims 6, 7, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Markham et al. (US 3,591,525) in view of Russell (US 4,854,353).

Markham et al. is silent as to the provision of a plurality of load cells, having the instantly claimed configuration, for measuring the weight of the dust collector, the transfer pot, and the



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particulate material drawn into the dust collector.

Russell, however, teaches the provision of a weighing mechanism 30 comprising a plurality of load cells 34 for measuring the weight of a filling apparatus, wherein the filling apparatus is mounted on a plurality of legs (e.g., projections 48, vertical members 72), each of the legs being secured to a common plate (i.e., platform 32), the plate being mounted on the load cells 34, the load cells being further mounted on a base 16 (see figures; column 2, lines 48-63). It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a plurality of load cells, according to the instantly claimed configuration, for measuring the weight of the dust collector, the transfer pot, and the particulate material drawn into the dust collector in the apparatus of Markham et al., on the basis of suitability for the intended use and absent a showing of unexpected results thereof, because the load cells would have allowed for the contents of the apparatus to be weighed during the particulate matter conveying operation, to insure that the apparatus was filled with a predetermined quantity of material by weight, as taught by Russell (column 1, lines 28-36).

In addition, although the collective teaching of Markham et al. and Russell fails to teach a cabinet for housing the various elements of the particulate matter conveying apparatus, it would have been further obvious for one of ordinary skill in the art at the time the invention was made to provide a cabinet for housing the apparatus of Markham et al., on the basis of suitability for the intended use and absent a showing of unexpected results thereof, because the Examiner takes Official Notice that the provision of a cabinet for housing solids handling equipment, for preventing contamination of the solids being handled as well as the surrounding environment, would have been considered conventional to one having ordinary skill in the art.

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7. Claims 6, 12, 13 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Markham et al. (US 3,591,525) in view of Fukushima et al. (JP 59-127642).

Regarding claims 6, 12 and 22, Markham et al. discloses that the vacuum producer **4** is in fluid communication with a source of pressurized air (i.e., via lines **6, 5**), and the apparatus further comprises: a first valve isolating the vacuum producer **4** from the source of pressurized air (i.e., the valve illustrated, but not labeled, in line **5**); a second valve isolating the transfer pot **8** from the source of pressurized air (i.e., the valve illustrated, but not labeled, in line **15**); a third valve isolating the transfer port **8** from the fluidized bed column **17** (i.e., the valve illustrated, but not labeled, at the bottom of line **16**); and a fourth valve isolating the dust collector **3** from the storage bin **1** (i.e., the valve illustrated, but not labeled, on the flexible pipe **2**).

Markham et al., however, is silent as to the provision of a plurality of load cells for measuring the weight of the dust collector, the transfer pot, and the particulate material drawn into the dust collector. Markham et al. is also silent as to the provision of a controller, electrically coupled to the load cells and respective actuators of the first, second, third and fourth valves, for controlling the opening and closing of the first, second, third and fourth valves.

Fukushima et al. (see abstract; figure) teaches a conventional apparatus for conveying solids **20**, wherein the apparatus comprises a plurality of load cells **12a, 12b, 12c** for measuring the weight of solids in the apparatus, and a controller **13** electrically coupled to the load cells and respective actuators of valves **5, 6, 9, 11** for controlling the opening and closing of the valves. It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the claimed load cells and corresponding controller in the modified apparatus of Markham et al., on the basis of suitability for the intended use and absent a showing of

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unexpected results thereof, because the load cells and corresponding controller would have provided weighing accuracy and smooth operation, as taught by Fukushima et al., and furthermore the provision of automated means to replace manual activity was held to have been obvious. *In re Venner* 120 USPQ 192 (CCPA 1958); *In re Rundell* 9 USPQ 220 (CCPA 1931).

Regarding claim 13, the recitation with respect to the sequencing of valve operation adds no further patentable weight to the claim, since the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

8. Claims 10 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Markham et al. (US 3,591,525) in view of Pendleton (US 2,992,858).

Markham discloses that a valve **10** covers the opening from the dust collector **3**, but is silent as to the valve comprising the instantly claimed configuration. Pendleton (see FIG. 1; column 2, line 10 to column 3, line 54), however, teaches a valve **22** for covering an opening **21** at the lower end of a dust collector (i.e., receptacle **17** with filter **23**), the valve having a plug **32/36/37** movable between an upper and a lower position in response to impingement of pressurized air thereon (i.e., compressed air **15**, via conduit **52**). It would have been obvious for one of ordinary skill in the art at the time the invention was made to substitute the valve as taught by Pendleton for the valve **10** in the apparatus of Markham et al., on the basis of suitability for the intended use and absent a showing of unexpected results thereof, because valve requires no electrical equipment for operation, thereby eliminating any chance of a spark causing an explosion, in the event that the material being handled is explosive in nature, as taught by

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Pendleton (see column 3, lines 50-56). Furthermore, the substitution of known equivalent structures involves only ordinary skill in the art, *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958), and when the prior art is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result, *KSR International Co. v. Teleflex Inc.*, 550 U.S. --, 82 USPQ2d 1385 (2007).

9. Claims 14, 29, 30, 32-36, 38, 39 and 42-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Markham et al. (US 3,591,525) in view of Brandauer et al. (EP 0 476 249).

Regarding claims 14, 29 and 30, the apparatus of Markham et al. is the same as the claimed apparatus, except that Markham et al. is silent as to the apparatus comprising another of the hoses **2** coupled to the dust collector **3**, another of the storage bins **1**, and a manifold coupled in fluid communication with the dust collector **3** and the hoses. Brandauer et al. (see FIG. 2; Abstract; Machine Translation), however, teaches an apparatus comprising a loading unit supplied with particulate material from a first bin (not shown) and another, second bin (not shown), wherein the bins are coupled to the loading unit via piping **19** and **20**, respectively, and the bins are isolated from the loading unit via a first valve **21** and a second valve **22**, respectively, the valves and piping forming a manifold. It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the claimed another bin, another hose, etc. in the apparatus of Markham et al., on the basis of suitability for the intended use and absent a showing of unexpected results thereof, because the plural bins, hoses, etc. would have enabled a plurality of different materials to be conveyed by the apparatus, as suggested by Brandauer et al. Furthermore, the duplication of part for multiplied effect was held

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to have been obvious. *St. Regis Paper Co. v. Beemis Co. Inc.* 193 USPQ 8, 11 (1977); *In re Harza* 124 USPQ 378 (CCPA 1960).

Regarding claims 32-36 and 38, Markham et al. (Figure; column 2, line 58 to column 3, line 31) discloses an apparatus comprising: a first bin 1 storing a first particulate material; a loading unit comprising a dust collector 3 and a transfer pot 8 in fluid communication with the first bin 1 and a fluidized bed column 1; a first valve (see illustrated valve in flexible pipe 2, not labeled) for isolating the first bin 1 from the loading unit; and a third valve (see illustrated valve at the base of pipe 16, not labeled) for isolating the loading unit from the fluidized bed column 17; wherein the loading unit is capable of maintaining a vacuum therein so that the first particulate material can be drawn (i.e., via pipe 2, hose) into the loading unit from the first bin 1 by the vacuum (i.e., produced by ejector 4), and the loading unit is capable of being pressured (i.e., with compressed air from line 6) so that the particulate material can be injected into the fluidized bed column 17 (i.e., via pipe 16) in response to pressurization of the loading unit.

The apparatus of Markham et al. is the same as the claimed apparatus, except that Markham et al. is silent as to the apparatus comprising a second bin for a second particulate material, a second valve for isolating the second bin from the loading unit, a hose coupling the second bin to the loading unit, and a manifold comprising the first and second valves.

Brandauer et al. (see FIG. 2; Abstract; Machine Translation), however, teaches an apparatus comprising a loading unit supplied with particulate material from a first bin (not shown) and a second bin (not shown), wherein the bins are coupled to the loading unit via piping 19 and 20, respectively, and the bins are isolated from the loading unit via a first valve 21 and a second valve 22, respectively, the valves and piping forming a manifold. It would have been

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obvious for one of ordinary skill in the art at the time the invention was made to provide the claimed second bin, second valve, etc. in the apparatus of Markham et al., on the basis of suitability for the intended use and absent a showing of unexpected results thereof, because the plural bins, valves, etc. would have enabled a plurality of different materials to be conveyed by the apparatus, as suggested by Brandauer et al. Furthermore, the duplication of parts for multiplied effect was held to have been obvious. *St. Regis Paper Co. v. Beemis Co. Inc.* 193 USPQ 8, 11 (1977); *In re Harza* 124 USPQ 378 (CCPA 1960).

In addition, although Markham et al. is silent as to a “catalytic cracking” reaction being conducted within the fluidized bed column 17, the apparatus of Markham et al. nonetheless meets the claims, since expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim. *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

Regarding claim 39, Markham et al. further discloses that the dust collector 3 comprises a filter 7 for collecting dust generated by the transfer of particulate material to the loading unit.

Regarding claim 42, Markham et al. further discloses that the dust collector 3 comprises a substantially cylindrical upper portion and an adjoining substantially conical lower portion (see figure); and the transfer pot 8 comprises a substantially cylindrical upper portion adjoining the lower portion of the dust collector 3, and substantially conical lower portion adjoining the upper portion of the transfer pot 8 (see figure).

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Regarding claims 43-45, Markham et al. further discloses that the dust collector 3 and the transfer pot 8 each comprise a respective sidewall; storage bin 1 and the dust collector 3 are non-adjointing; and the dust collector 3 adjoins the transfer pot 8 (see figure).

10. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Markham et al. (US 3,591,525) in view of Brandauer et al. (EP 0 476 249), as applied above, and further in view of Yamashita (JP 01-214519).

The modified apparatus of Markham et al. is the same as the instantly claimed apparatus. In addition, Markham et al. discloses that the dust collector 3 is capable of maintaining a vacuum therein (as produced by air ejector 4), so that the particulate material can be drawn into the dust collector 3 via hose 2. Markham et al., however, is silent as to the transfer pot 8 being capable of being pressurized. In contrast, the compressed air from line 6 feeds into the ejector 12 of the loading unit. Yamashita, however, teaches a loading unit in which the transfer pot (i.e., pressure tank 2) is capable of being pressurized (i.e., using air from pump 3). It would have been obvious for one of ordinary skill in the art at the time the invention was made to configure the transfer pot in the modified apparatus of Markham et al. to be capable of being pressurized, on the basis of suitability for the intended use and absent a showing of unexpected results thereof, because the claimed configuration would have been considered conventional in the art, as evidenced by Yamashita, and furthermore, a mere rearrangement of parts that does not modify the operation of a device was held to have been obvious. *In re Japikse*, 181 F.2d 1019, 1023, 86 USPQ 70, 73 (CCPA 1950); *In re Kuhle* 526 F.2d 553, 188 USPQ 7 (CCPQ 1975).

11. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Markham et al. (US 3,591,525) in view of Brandauer et al. (EP 0 476 249), as applied above, and further in view

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of Harpham (WO 00/48723).

Markham et al. is silent as to the provision of a volume chamber/moisture trap for drying the air (e.g., in line 6) used to pressurize the loading unit. Harpham, however, teaches that when compressed air is used as the conveying medium, a dehumidifying apparatus may be connected before or after the compressor, if the material being conveyed is sensitive to moisture (see page 4, lines 12-13). It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a volume chamber/moisture trap for drying the air used to pressurize the loading unit in the modified apparatus of Markham et al., on the basis of suitability for the intended use and absent a showing of unexpected results thereof, because a volume chamber/moisture trap would have been considered a well known dehumidifying apparatus in the art, and furthermore, such means would have prevented the moisture in the air from affecting a moisture sensitive material being conveyed by the apparatus, as taught by Harpham.

12. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Markham et al. (US 3,591,525) in view of Brandauer et al. (EP 0 476 249), as applied above, and further in view of Evans (US 6,358,401).

Markham et al. is silent as to the provision of a controller, the controller being electrically coupled to respective actuators of the first, second and third valves so that the controller can open and close the first second and third valves. In any event, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a controller in the modified apparatus of Markham et al., on the basis of suitability for the intended use and absent a showing of unexpected results thereof, because the use of controllers for providing automated control of the opening and closing of valves would have been considered well known in the art,



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as evidenced by Evans, and furthermore the provision of automated means to replace manual activity was held to have been obvious. *In re Venner* 120 USPQ 192 (CCPA 1958); *In re Rundell* 9 USPQ 220 (CCPA 1931). Evans, for instance, evidences this well known concept by teaching an apparatus for conveying particulate materials, wherein the opening and closing of valves (e.g., valves **24**, **48**, etc.) is controlled by means of a controller **28** (see figure; e.g., column 6, line 62 to column 7, line 11; column 7, lines 25-49).

13. Claims 1, 4, 8, 9, 11, 15-21, 24, 26, 27, 31 and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Evans (US 6,358,401) in view of Yamashita (JP 01-214519).

Regarding claims 1 and 46, Evans (Figure; column 6, line 54 to column 7, line 49) discloses an apparatus comprising: a means for conveying catalyst and/or additives (i.e., a bin **22** containing particulate material **12** and a pressure vessel **16**, communicating with a pressurized gas line **42**) in fluid communication with a fluidized catalytic cracking unit (i.e., an industrial process **14**, e.g., a FCC unit; see column 6, lines 25-45). Evans, however, is silent as to the means for conveying catalyst and/or additives comprising the instantly claimed configuration.

Yamashita (see figure; Abstract) teaches a means for conveying particulate material comprising: a dust collector/dust collecting means (i.e., hopper **1**) in fluid communication (i.e., via suction pipe **4a**) with at least one storage bin (not labeled) for holding a particulate material; a vacuum producer/vacuum producing means (i.e., as generated by air pump **3**, via suction pipe **4b**) in fluid communication with the dust collector **1**, so that the vacuum producer **3** generates a vacuum within the dust collector **1** that draws the particulate material into the dust collector **1**; and a transfer pot/means for receiving (i.e., pressure tank **2**) in fluid communication with the dust collector **1** for receiving the particulate material from the dust collector **1**, the transfer pot/means

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for receiving **2** being in fluid communication (i.e., via transport pipe **6**) with an end use and a source of pressurized air (i.e., generated by air pump **3**, via the pipe, not labeled, with valve **12**).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to substitute the means for conveying particulate material as taught by Yamashita for the means for conveying catalyst and/or additives in the apparatus of Evans, on the basis of suitability for the intended use and absent a showing of unexpected results thereof, because the particulate material (e.g., catalyst) would be carried through a simple structure with no fault, and general usage can be improved, as suggested by Yamashita. Furthermore, it has been held that the substitution of known equivalent structures involves only ordinary skill in the art, *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958), and when the prior art is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result, *KSR International Co. v. Teleflex Inc.*, 550 U.S. --, 82 USPQ2d 1385 (2007).

Regarding claim 4, Yamashita teaches that the dust collector **1** comprises a filter **7** in fluid communication with the vacuum producer **3** (i.e., via suction pipe **4b**), so that the filter is structurally capable of collecting dust from within the dust collector.

Regarding claim 8, Yamashita teaches that the dust collector **1** has a substantially cylindrical upper portion and an adjoining, substantially conical lower portion; and the transfer port **2** comprises a substantially cylindrical upper portion adjoining the lower portion of the dust collector **1**, and a substantially conical lower portion adjoining the upper portion of the transfer pot **2** (see figure).

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Regarding claim 9, Yamashita teaches that the dust collector **1** has an opening formed therein (i.e., at valve **8**) for permitting the particulate material to flow from the dust collector **1** to the transfer pot **2**.

Regarding claim 11, Yamashita teaches that the lower portion of the transfer pot **2** has an opening formed therein (i.e., in communication within transport pipe **6**) for permitting particulate material to flow from the transfer pot **2** to its location of end use (e.g., the FCC unit, in the modified apparatus of Evans).

Regarding claims 15-17, Yamashita teaches that the dust collector **1** and the transfer pot **2** each comprise a respective sidewall; the at least one storage bin (not labeled) and the dust collector **1** are non-adjoining; and the dust collector **1** adjoins the transfer pot **2** (see figure).

Regarding claims 18-20, Evans (Figure; column 6, line 54 to column 7, line 49) discloses an apparatus comprising: a means for conveying catalyst and/or additives (i.e., a bin **22** containing particulate material **12** and a pressure vessel **16**, communicating with a pressurized gas line **42**) in fluid communication with a fluidized catalytic cracking unit (i.e., an industrial process **14**, e.g., a FCC unit; see column 6, lines 25-45). Evans, however, is silent as to the means for conveying catalyst and/or additives comprising the instantly claimed configuration.

Yamashita (see figure; Abstract) teaches a means for conveying particulate material comprising: a storage bin (not labeled, see figure) for storing a particulate material at a first location; and a loading unit comprising a dust collector (i.e., hopper **1**) and a transfer pot (i.e., pressure tank **2**) positioned in a second location remote from the first location, the loading unit **1/2** being in fluid communication with the storage bin (i.e., via suction pipe **4a**) and a location of end use (i.e., via transport pipe **6**) on a selective basis, wherein the loading unit is capable of

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being evacuated (i.e., via air pump **3**, defining a vacuum producer, and suction pipe **4b**) so that a resulting vacuum within the loading unit draws the particulate material from the storage bin (i.e., via suction pipe **4a**), and the loading unit is capable of being pressurized (i.e., via air pump **3** and the pipe, not labeled, with 3-way valve **12**) so that the particulate material is transferred from the loading unit to the location of end use (i.e., via transport pipe **6**).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to substitute the means for conveying particulate material as taught by Yamashita for the means for conveying catalyst and/or additives in the apparatus of Evans, on the basis of suitability for the intended use and absent a showing of unexpected results thereof, because the particulate material (e.g., catalyst) would be carried through a simple structure with no fault, and general usage can be improved, as suggested by Yamashita. Furthermore, it has been held that the substitution of known equivalent structures involves only ordinary skill in the art, *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958), and when the prior art is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result, *KSR International Co. v. Teleflex Inc.*, 550 U.S. --, 82 USPQ2d 1385 (2007).

Regarding claim 21, Yamashita teaches that the dust collector **1** comprises a filter **7** in fluid communication with the vacuum producer **3** for collecting dust generated by transfer of the particulate material from the storage bin to the dust collector.

Regarding claim 24, Yamashita teaches that the dust collector **1** has a substantially cylindrical upper portion and an adjoining, substantially conical lower portion; and the transfer

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port **2** comprises a substantially cylindrical upper portion adjoining the lower portion of the dust collector **1**, and a substantially conical lower portion adjoining the upper portion of the transfer pot **2** (see figure).

Regarding claim 26, Yamashita teaches that the lower portion of the transfer pot **2** has an opening formed therein (i.e., in communication within transport pipe **6**) for permitting particulate material to flow from the transfer pot **2** to its location of end use (e.g., the FCC unit, in the modified apparatus of Evans).

Regarding claims 27 and 31, Yamashita teaches that the dust collector **1** and transfer pot **2** each comprise a respective sidewall, and the dust collector **1** adjoins the transfer pot **2** (figure).

14. Claims 10 and 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Evans (US 6,358,401) in view of Yamashita (JP 01-214519), as applied above, and further in view of Pendleton (US 2,992,858).

Yamashita further teaches a valve **8** for covering an opening at the lower end of the dust collector **1**, but is silent as to the valve having the instantly claimed configuration. Pendleton (see FIG. 1; column 2, line 10 to column 3, line 54), however, teaches a valve **22** for covering an opening **21** at the lower end of a dust collector (i.e., receptacle **17** with filter **23**), the valve having a plug **32/36/37** movable between an upper and a lower position in response to impingement of pressurized air thereon (i.e., from source of compressed air **15**, via conduit **52**). It would have been obvious for one of ordinary skill in the art at the time the invention was made to substitute the valve as taught by Pendleton for the valve in the modified apparatus of Evans, on the basis of suitability for the intended use and absent a showing of unexpected results thereof, because valve requires no electrical equipment for operation, thereby eliminating any

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chance of a spark causing an explosion, in the event that the material being handled is explosive in nature, as taught by Pendleton (see column 3, lines 50-56). Furthermore, it has been held that the substitution of known equivalent structures involves only ordinary skill in the art, *In re Fout* 213 USPQ 532 (CCPA 1982); *In re Susi* 169 USPQ 423 (CCPA 1971); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *In re Ruff* 118 USPQ 343 (CCPA 1958), and when the prior art is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result, *KSR International Co. v. Teleflex Inc.*, 550 U.S. --, 82 USPQ2d 1385 (2007).

15. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Evans (US 6,358,401) in view of Yamashita (JP 01-214519), as applied above, and further in view of Harpham (WO 00/48723).

Evans and Yamashita collectively teach that the second location is remote from the first location. Evans and Yamashita, however, do not specify that the second location is located no more than approximately twenty feet from the first location. In any event, it would have been an obvious design choice for one of ordinary skill in the art at the time the invention was made to configure the second location to be no more than approximately twenty feet away from the first location in the modified apparatus of Evans, on the basis of suitability for the intended use and absent a showing of unexpected results thereof, as further evidenced by Harpham (see page 4, line 19 to page 5, line 3).

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible

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harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

16. Claims 1-46 and 57 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-46, 57-67 and 71-85 of copending Application No. 10/593,499. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications essentially claim the same apparatus for injecting catalyst and/or additives into a fluidized catalytic cracking unit.

Regarding claims 1-17, 46 and 57, copending application '499 similarly claims an apparatus comprising: a dust collector with a filter, a vacuum produced, and a transfer pot (see, e.g., claims 1, 4, 46 and 57); a hose coupling the dust collector and the storage bin, and a first valve coupled to the hose (see, e.g., claims 2, 3); a volume chamber and moisture trap (see, e.g.,

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claim 5); a plurality of load cells and a cabinet for housing the dust collector and transfer pot (see, e.g., claims 6 and 7); a valve covering the opening at the lower portion of the dust collector (see, e.g., claim 10); first, second, third and fourth valves (see, e.g., claims 12 and 13); and another hose, another storage bin, and a manifold (see, e.g., claim 14).

Regarding claims 18-31, copending application '499 similarly claims an apparatus comprising: a storage bin at a first location and a loading unit at a second location, the loading unit comprising a dust collector with a filter and a transfer pot (see, e.g., claims 18, 19, 21); a vacuum producer (see, e.g., claim 20); a plurality of load cells and a cabinet (see, e.g., claims 22 and 23); a valve covering the opening of the dust collector (see, e.g., claim 25); and at least two storage bins and a manifold (see, e.g., claims 29 and 30).

Regarding claims 32-45, copending application '499 similarly claims an apparatus comprising: a first bin, a second bin, a loading unit comprising a dust collector with a filter and a transfer pot, a first valve, a second valve, and a third valve (see, e.g., claims 32, 36, 39); a manifold (see, e.g., claim 33); first and second hoses (see, e.g., claim 35); a vacuum producer (see, e.g., claim 38), a volume chamber and moisture trap (see, e.g., claim 40); and a controller (see, e.g., claim 41).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

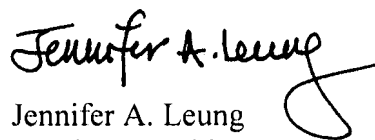
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is (571) 272-1449. The examiner can normally be reached on 9:30 am - 5:30 pm Monday through Friday.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jennifer A. Leung  
October 22, 2007